Comments of Vivato Inc.

Vivato, a Wi-Fi infrastructure systems company, manufactures Wi-Fi switches designed to enable high bandwidth Wi-Fi wireless networks. Vivato provides products that increase the coverage area and reduce the cost of deploying Wi-Fi networks.

Vivato offers the following comments.

Advanced Antenna Technologies

FCC interpretations of the Part 15 point-to-point equipment rules have enabled technology advancements such as phased array antennas to provide a significant improvement in the deployment of Wi-Fi networks. Narrow beam width antennas provide several significant improvements in wireless systems. A narrow beam width antenna, having high directivity, reduces the interference in unintended directions. In addition, these antennas improve the data throughput to a receiving device at a given distance. Increased data throughput reduces the time that a transmitted signal is present, given a fixed quantity of data to transmit. Narrow beam width receiving antennas reduce the susceptibility to interference, and will usually be used when narrow beam width transmitting antennas are part of the wireless system.

In order to obtain overall optimum performance, the beam width and side-lobes should be optimized for the intended deployment application. We ask that rules be flexible enough to allow this opportunity. We would also like to encourage flexibility in the power rules that will allow future techniques such as MIMO and space-time coding to provide advantages.

It is important to ensure that emission measurements are made with all radiating elements excited, if these elements are to be simultaneously used in actual service. In addition, when multiple beams may be simultaneously present, the emission measurements should be performed with all beams powered.

Replacement Antennas for Unlicensed Devices

Antenna patterns and intermodulation characteristics may change with replacement antennas of the same type. Care must be taken to ensure that spurious limits are met with all antennas that are intended to be used with a particular transmitter.

Power Measurement Procedures for Digital Modulation Systems

Average power measurement is preferred because it provides better metrology. Average power is best performed when the device is continuously transmitting. A pulsed transmitting system may be measured using a gated average power measurement.

Respectfully Submitted,

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